International Civil Aviation Organization
CAR/SAM Regional Planning and Implementation Group (GREPECAS)

INFORMATION PAPER

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Mexico City, Mexico, 16 to 18 July 2019

Agenda Item 3: Global, Intra- and Inter-Regional Air Navigation Activities
3.3 Follow-up to the implementation of inter- and intra-regional activities

ROUTES OPTIMIZATION PLAN IN CHILE

(Presented by Chile)

EXECUTIVE SUMMARY

This Note informs that Chile concludes the implementation of RNAV 5 in continental airspace and RNAV 10 (RNP 10) in oceanic airspace, within the plan for optimizing ATS routes in the SAM Region.

Strategic Objectives:	• Air Navigation Capacity and Efficiency • Economic Development of Air Transport • Environmental Protection
References:	• Meeting reports ATS / RO 5, ATS / RO 6 • Meeting report SAM / IG 23 • GREPECAS/18 report

1. Introduction

1.1 In November 2011, Chile implemented the RNAV 5 navigation specification in the continental RNAV airways in the Flight Information Regions of Antofagasta, Santiago, Puerto Montt and Punta Arenas.

1.2 Until then, Chile had a structure of routes based on ground radioaids and area navigation routes, both established in the same points and trajectories that commercial aviation used for flights planning and flight plans presentation.

1.3 At the ATS / RO 5 meeting held on July 2013, Chile informed about the plan for optimizing the ATS route structure being at that time developed and the implementation of the RNAV 5 navigation specification, in accordance with the trajectories and needs of the route network at the SAM Region.

1.4 The use of area navigation systems (RNAV), air traffic management (ATM) and the use of ATS surveillance systems as a whole, had allowed aircraft to fly more efficient and direct routes compared to that offered by ground radioaids airways network, resulting in a considerable increase in efficiency and

CO2 emissions reduction. However, the planning and dispatching of each flight was still done based on the published structure.

2 Analysis

2.1 Within the implementation of RNAV 5 in the continental airspace, from mid-2013 until end of 2016, the project to optimize the structure of domestic routes in Chile was developed.

2.2 Implementation was programmed in two phases and was carried out with the active collaboration of the users. The first phase which included the northern part of the country, from the city of Arica to Santiago, became effective on September 18th 2014 and the second part, which considered the southern part of the country, from Santiago to Punta Arenas, became effective on December 8th of 2016.

2.3 Regarding oceanic airspace, in May 2014 Chile published an AIC informing all users about the implementation of RNAV 10 (RNP 10) in the airspace corresponding to Easter Island FIR and in the airspace delegated to Chile's Oceanic Area Control Centre by Antofagasta FIR, Santiago FIR, Puerto Montt FIR and Punta Arenas FIR, with the purpose of harmonizing the use of oceanic airspace with the adjacent FIRs of New Zealand and Tahiti.

2.4 Among the benefits obtained by this optimization project for continental and oceanic routes are:

a. Workload reduction for controllers and pilots as a result of the decrease in communications associated with the management of direct routes outside airways.
b. Reduction of the distances between airways for the application of lateral separation.
c. Reduction of distance flown and fuel consumption, with the consequent reduction in the emission of polluting gases.
d. Allow users to use optimum levels in their most convenient flight paths
e. Greater access to optimal flight levels.
f. Reduction of the impact in the air traffic control management due to failure in the visualization systems.
g. Increase in airspace capacity as a consequence of the smaller spacing between routes.
h. Improvement on more free descent and ascent profiles and with fewer vertical restrictions applying CCO and CDO.

2.5 Currently, there is a consolidated route structure that is beneficial for users and air traffic service provider.

2.6 Chile concludes the implementation of RNAV 5 in the continental airspace and RNAV 10 (RNP 10) in the oceanic airspace under the jurisdiction of the State of Chile.

3 Action

3.1 The meeting is invited to note the information contained in this paper.

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